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Helping you meet climate change head on

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New climate projections underline the need to prepare the UK for a warmer future and to take action now to limit the severity of change, Environment Secretary Hilary Benn announced today.

The UK Climate Projections 2009 (UKCP09) confirm that the UK is likely to see hotter, drier summers and warmer, wetter winters coupled with more frequent extreme weather such as flooding, heatwaves and droughts.

UKCP09 is the latest cutting edge science developed by the Met Office Hadley Centre and is the first time that a probabilistic approach has been used for climate projections, allowing us to take a risk-based approach to planning for the future.

Met Office Chief Scientist, Julia Slingo, said: “Through UKCP09 the Met Office has provided the world’s most comprehensive regional climate projections with a unique assessment of the possible changes to our climate through the rest of this century. For the first time businesses and authorities have the tools to help them make risk-based decisions to adapt to the challenges of our changing climate.”

More about UKCP09

Dr Vicky Pope explains the science behind the UK Climate Projections. or download the transcript (PDF, 128 kB)

Read the full Defra News Release

Notes

- The Met Office Hadley Centre is the UK’s foremost centre for climate change research. Mainly funded by DECC (the Department of Energy and Climate Change), Defra (the Department for Environment, Food and Rural Affairs) and the Ministry of Defence, it provides information and advice to the UK Governments on climate change issues.
- The UK Climate Projections have been funded by the Department for Environment, Food and Rural Affairs, Department of Energy and Climate Change with the Scottish Government, Welsh Assembly Government and Northern Ireland Department of the Environment.

UK Climate Projections 2009

Dr Vicky Pope, Climate change expert

What is UKCP09?
We have produced projections before, the last ones were in 2002. But this represents a major step forward in providing information for planning adaptation advice. It's the most comprehensive analysis, to date, of what will happen in the future to climate in the UK.

We've seen climate predictions before, what is so different about these?
The new thing about these projections is, firstly, that they provide more detailed information at 25 km resolution. But, more importantly, they provide probabilities advice. So what they are doing is providing a range of possible outcomes, because we know that the future isn't certain and we need to be able to quantify that uncertainty so that people can use the information in risk analysis.

How have they been made?
We've taken the Met Office Hadley Centre science as the basis for our projections and we've created 400 different models from that, representing all that we know about the uncertainty in our model. We've then, also, combined that information with information from 12 international known models from around the world, which have been in the Intergovernmental Panel on Climate Change. We've taken all of that and produced probability information, combining it with 11 regional models which we've run to provide detailed information for the UK, and to produce statistical information about the risks of climate change in the future.

How will our climate change?
We'd expect for the UK that temperatures will increase more for the summer than for the winter. We'd expect that rainfall overall throughout the year will stay pretty much the same, but there will be increases in the winter and decreases in the summer.

How hot will it get in the summer?
Temperatures are likely to rise everywhere, for example in the South East of England by the 2050s we'd expect the average daily maximum temperatures the reach 24 degrees, which is as hot as we saw in the very hot summer of 2003 and 2006 and even the record-breaking summer in 1976. The hottest day of the summer could typically be 32.5 degrees. By the time we reach the 2080s the temperatures will be even higher and the hottest day of the summer, in a very hot summer, could go as high as 41 degrees.

Previously summer rainfall was to be much less, has this been confirmed?
The latest results suggest that summer rainfall will decrease, probably by around 20%, but there is a small chance it could decrease by as much as 60%. The previous projections suggested that it could decrease by a much larger amount of 60%. This illustrates the value of the new projections in giving probability ranges and actually assessing risk properly. The previous model that we were using tended to be too dry in summer and that's why it dried out more than the projections that we've got now.

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Who are these projections meant for?
The comprehensive nature of these projections means that they are ideal for people who are doing planning of large infrastructure projects (long-term planning for the future) where they need to take adaptation information into account and they need to do a proper risk assessment. So they are really designed for people who want to look in detail about how climate will change in the future, how it will impact on other factors and how it will interact with other factors. They're not specifically designed for the public, but of course they can be used by the public as well.

How seriously can we take the worse case scenarios?
Obviously the probabilistic nature of the projections means that anything that only has a 10% chance of happening we need to recognise is unlikely, but nevertheless we need to look at the risk. We also need to look the high, medium and low emission scenarios and use that information to help us understand how much we need to reduce emissions in order to avoid the worse possible extremes.

How much can we rely on these predictions — are they not already out of date?
The predictions use the best possible science that's available now, so they represent the state of art of the science. As we learn more about how climate will change in the future — particularly the risks at the high end of climate change, with things like methane releases temperatures increase — we will be able to refine the predictions and so they will need to be updated in the future.

Are these predictions inevitable or can we still limit the effects of climate change?
There's a lot that we can do to limit the effects of climate change by reducing our emissions. The Government is working hard in negotiations, in Copenhagen in December, to encourage international reductions in emissions. The EU has a very strong stance in this in trying to limit global warming to 2 degrees, which would reduce many of the impacts later on in the century. When we look at the impacts up to 2040, 2050 many of those are already set because of the emissions that we've already produced and so we will need to adapt to those changes.